6. (Amended) A method according to claim 1 wherein the processing step comprises sensory evaluation of the sample materials by human paneling to determine the quality of the material.

A2

7. (Amended) A method according to claim 1 wherein in the step of measuring an analyte uses a near-field probe which comprises a coated optical fiber is used for measuring the at least one analyte.

9. (Amended) A method according to claim 1 wherein a mixture of the analytes is screened, and the signal output represents the overall properties of the mixture.

A3

10. (Amended) A method according to claim 1 wherein in the measuring step the at least one analyte is collected by a static or dynamic headspace technique.

11. (Amended) A method according to claim 10, wherein at least one member of the group consisting of heat, electromagnetic radiation, electricity, magnetism, and mechanical vibration assists in transferring the at least one analyte from the material to the gas, vapor, suspension in a gas or volatile organic compound.

12. (Amended) A method according to claim 1 wherein at least one member of the group consisting of a semiconductor gas sensing device, a conductive polymer gas sensing device, a surface acoustic wave gas sensing device, a microbar sensing device, a micromechanical probe, a quartz crystal microbalance, and an optical sensor is used in the detecting step.

13. (Amended) A method according to claim 1 wherein at least a metal oxide semiconductor gas sensing device is used in the detecting step.

A4

15. (Amended) A method according to claim 1, wherein the electronic device is a circuit board or a multichip module.

16. (Amended) A method according to claim 1, wherein the contaminant is at least one member of the group consisting of anions, organic acids, organics, and particulates.

17. (Amended) A method according to claim 1, further comprising the step of using the information in a feedback loop to control the process.

43. (Amended) An apparatus for probing at least the quality of a material used in electronics or optics, comprising:

a multivariate detector having at least one of a sensing probe, sensing location, or physicochemical property,

the multivariate detector capable of detecting at least one analyte selected from the group consisting of the material, a constituent of the material, a byproduct of the material, and a reaction product of a constituent of the material, a contaminant and a tag;

transmission means for transmitting a signal between the multivariate detector and a data acquisition system, the data acquisition system capable of converting the signal into raw data;

a computational device capable of processing at least part of the raw data using multivariate analysis to create a data set; and

an output device capable of displaying, storing, or using the data set.

Please cancel claims 8, 14 and 20-42.

REMARKS

The Office Action dated March 27, 2002 has been carefully considered. Claims 1, 6, 7, 9-13, 15-17 and 43 have been amended. Claims 8, 14 and 20-42 have been cancelled. Claims 1-7, 9-13, 15-19 and 43 are in this application.

Claims 14 and 20-42 drawn to an unelected invention have been cancelled.

Claims 6, 7, 11 and 15 were rejected as indefinite due to language. Claims 6, 7, 11 and 15 were amended to obviate the Examiner's rejection. With regard to claim 6, applicant submits that human paneling is a known sensory evaluation technique used in the food science research and industry. A typical protocol can be found as described in Green, B.G., Dalton, P., Cowart, B., Shaffer, G., Rankin, K. and Higgins, J., "Evaluating the 'labeled magnitude scale' for measuring sensations of taste and smell." Chemical Senses, 21, p. 323-334 (1996) as referenced on attached form PTO 1449, for detecting the